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State Scientists and Federal Partners Map the Floor of Cape Cod Bay

CZM-USGS Project Will Lead to Better Management and Protection of Commonwealth's Ocean Resources

BOSTON – A team of Massachusetts Office of Coastal Zone Management (CZM) and U.S. Geological Survey (USGS) scientists last week embarked on a mission to map the seafloor of Cape Cod Bay – the latest phase of a four-year-old project that has already mapped nearly 500 square miles of the ocean bottom from the New Hampshire border to Nantasket Beach.

Seafloor mapping is an important tool for protecting fish habitat, illustrating potential areas of sand resources for beach nourishment projects, and delineating appropriate areas for ocean-based construction as well as for marine reserves.

"While most terrestrial landscapes were mapped long ago, much of the ocean floor remains uncharted," said Energy and Environmental Affairs Secretary Ian Bowles, whose office includes CZM. "By providing unparalleled views of the seafloor, this joint project with the U.S. Geological Survey promises to increase scientists' understanding of the ocean environment, improve regulators' capacity to manage ocean and coastal resources, and inspire greater appreciation for the diversity of life and habitats in the Commonwealth's waters."

Photographs, video, and sediment samples collected during a nine-day survey, which wraps up Friday, will be combined with sonar data previously collected in Cape Cod Bay to produce high-resolution seafloor maps. Maps produced by the CZM-USGS Seafloor Mapping Initiative will guide ocean management and habitat protection, the review and siting of ocean construction projects, and future research. Since its inception in 2003, the Initiative has published seafloor maps of the North Shore and Boston Harbor. Maps covering Ipswich Bay (Salisbury to Cape Ann) are expected to be published at the end of this year, and those for Cape Cod Bay in 2009.

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While USGS is working on smaller mapping projects throughout the United States, the scale of seafloor mapping of state waters and the degree of resource sharing between state and federal agencies for the Massachusetts project is unprecedented. CZM-USGS maps and digital data are being published online and on DVDs, and distributed to natural resource management and science communities throughout New England.

The multi-year project was launched with $1.5 million in habitat restoration and mitigation funding from the Algonquin Gas Transmission Company's "HubLine" natural gas pipeline – a 29.4-mile pipe that runs from Salem and Beverly to Weymouth. Additional project funding includes $1 million in state appropriations and, most recently, $3 million from a mitigation package associated with the Northeast Gateway Deepwater Port liquefied natural gas project that will be located 13 miles southeast of Gloucester. All monies are held in CZM's Seafloor Mapping Trust. To date, the project has spent approximately $3.5 million in state and federal funds, with USGS providing a one-to-one match of state and mitigation funds since 2004.

Data collected by CZM and USGS during this week's mapping cruise will be used to verify – or "groundtruth" – acoustic imagery collected in Cape Cod Bay using various sonar technologies earlier this year and in 2006. Detailing topography and geology, water depths and associated organisms, the maps are revealing a more diverse seafloor than scientists previously thought existed off of the Massachusetts coast. Bottom types include boulder reefs and cobble habitats important to Atlantic cod and lobster, "sand wave" areas used by clams and flounder, and deep, muddy basins that support burrowing species such as anemones and fish such as winter flounder.

For more information on seafloor mapping projects, visit http://woodshole.er.usgs.gov/project-pages/coastal_mass/.

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